IN THE CLAIMS

Please cancel claims 1-30, and amend claims 33 and 39 as follows:

1. - 30. (CANCELED)

31. (PREVIOUSLY PRESENTED) An apparatus for receiving a non-coherent layered modulation signal comprised of a sum of a first layer signal and a second layer signal, the apparatus comprising:

a tuner for receiving the non-coherent layered modulation signal and producing a layered in-phase signal and a layered quadrature signal;

an analog-to-digital converter for digitizing the layered in-phase signal and the layered quadrature signal;

a processor for processing the digitized layered in-phase signal and the digitized layered quadrature signal to produce a lower layer in-phase signal and a lower layer quadrature signal, an upper layer in-phase signal and an upper layer quadrature signal, the processor comprising:

a modulation map configured to modify the upper layer in-phase signal and the upper layer quadrature signal to account for transmission distortions of the layered modulation signal to produce an ideal upper layer in-phase signal and an ideal upper layer quadrature signal; and

a subtractor configured to subtract the ideal upper layer in-phase signal from the digitized layered in-phase signal to produce the lower layer in-phase signal and to subtract the ideal upper layer quadrature signal from the digitized layered quadrature signal to produce the lower layer quadrature signal;

a digital-to-analog converter for converting the lower layer in-phase signal and the lower layer quadrature signal to a lower layer in-phase analog signal and a lower layer quadrature analog signal; and

a modulator for modulating the lower layer in-phase analog signal and the lower layer quadrature analog signal to produce a single layer signal.

32. (PREVIOUSLY PRESENTED) The apparatus of Claim 31, wherein the processor is adapted to produce the layered in-phase signal and the layered quadrature signal by match filtering the layered in-phase signal and the layered quadrature signal.

33. (CURRENTLY AMENDED) The apparatus of claim 31, wherein the [[lower]] upper layer signal is a legacy signal, and the lower layer signal is a non-legacy signal.

34. (PREVIOUSLY PRESENTED) The apparatus of Claim 31, wherein the processor is further configured to delay the digitized layered in-phase signal and the digitized layered quadrature signal to synchronize the subtraction of the ideal upper layer in-phase signal from the layered in-phase signal and the subtraction of the ideal upper layer in-phase signal from the layered in-phase signal.

35. (PREVIOUSLY PRESENTED) The apparatus of claim 34, wherein the processor further comprises:

a first delay element configured to apply a first delay to the digitized layered in-phase signal and the digitized layered quadrature signal;

an amplitude and phase matching coefficient generator, configured to generate amplitude and phase matching coefficients from the digitized and first delayed layered in-phase signal, the digitized and first delayed quadrature signal, the modified upper layer in-phase signal and the modified upper layer quadrature signal;

an amplitude and phase matcher configured to apply the amplitude and phase matching coefficients to the modified upper layer in-phase signal and the modified upper layer quadrature signal to generate the ideal upper layer in-phase signal and the ideal upper layer quadrature signal; and

a second delay element, configured to apply a second delay to the digitized and first delayed layered in-phase signal and the digitized and first delayed layered quadrature signal to produce the delayed digitized layered in-phase signal and the delayed digitized layered quadrature signal.

36. (PREVIOUSLY PRESENTED) A method of receiving a non-coherent layered modulation signal comprised of a sum of a first layer signal and a second layer signal, the method comprising the steps of:

receiving the layered modulation signal and producing a layered in-phase signal and a layered quadrature signal;

digitizing the layered in-phase signal and the layered quadrature signal;

decoding the layered in-phase signal and the layered quadrature signal to produce a lower layer in-phase signal, a lower layer quadrature signal, an upper layer in-phase signal and an upper layer quadrature signal, comprising the steps of:

modifying the upper layer in-phase signal and the upper layer quadrature signal to account for transmission distortions of the layered modulation signal to produce an ideal upper layer in-phase signal and an ideal upper layer quadrature signal;

subtracting the ideal upper layer in-phase signal from the layered in-phase signal to produce the lower layer in-phase signal;

subtracting the ideal upper layer quadrature signal from the layered quadrature signal to produce the lower layer quadrature signal;

converting the lower layer in-phase signal and the lower layer quadrature signal to a lower layer in-phase analog signal and a lower layer quadrature analog signal; and

modulating the lower layer in-phase analog signal and the lower layer quadrature analog signal to produce a single layer signal.

37. (PREVIOUSLY PRESENTED) The method of Claim 36, wherein the step of decoding further comprises delaying the digitized layered in-phase signal and the digitized layered quadrature signal to synchronize the subtraction of the ideal upper layer in-phase signal from the layered in-phase signal and the subtraction of the ideal upper layer in-phase signal from the layered in-phase signal.

38. (PREVIOUSLY PRESENTED) The method of claim 37, wherein the step of decoding the layered in-phase signal and the layered quadrature signal comprises the steps of:

applying a first delay to a the digitized layered in-phase signal and the digitized layered quadrature signal;

generating amplitude and phase matching coefficients from the digitized and first delayed layered in-phase signal, the digitized and first delayed quadrature signal, the modified upper layer in-phase signal and the modified upper layer quadrature signal;

applying the amplitude and phase matching coefficients to the modified upper layer in-phase signal and the modified upper layer quadrature signal to generate the ideal upper layer in-phase signal and the ideal upper layer quadrature signal;

applying a second delay to the digitized and first delayed layered in-phase signal and the digitized and first delayed layered quadrature signal to produce the delayed digitized layered in-phase signal and the delayed digitized layered quadrature signal.

39. (CURRENTLY AMENDED) The method of claim 36, wherein the [[lower]] upper layer signal is a legacy signal, and the lower layer signal is a non-legacy signal.